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Black & Veatch Special Projects Corp.

USEPA/RAC VII
American Chemical Services/RAO (057-ROBF-05J7L1)

BVSPC Project 46526
BVSPC File C.3
April 16, 2001

Mr. Kevin Adler
U.S. Environmental Protection Agency
77 W. Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

*KA.
Approved - Budget 4/16/2001
(include cost task 2)*

Subject: Transmittal of Final Work Plan for RA
Oversight at the ACS Superfund Site

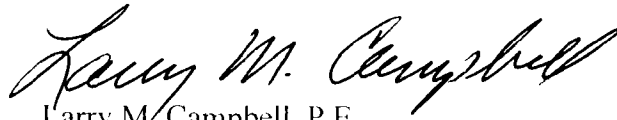
Dear Mr. Adler:

Transmitted herewith is the final work plan for oversight of the remedial action (RA) being conducted by the Potentially Responsible Parties Group at the American Chemical Services Superfund site in Griffith, Indiana. This work plan has been prepared in response to the statement of work (SOW) received with the initial work assignment form dated December 19, 2000, the revised SOW dated February 20, 2001, and the instructions received at the kickoff meeting on February 14, 2001. This final work plan has been revised to include the results of the negotiations conference call on April 12, 2001.

This work plan is presented in two volumes: Volume 1 describes our technical approach to implementing the RA oversight, and Volume 2 presents the financial documentation, including the Optional Form 60, associated with the RAO. All information in Volume 2 is considered confidential business information.

If you have any questions, please call (312-683-7856) or email (campbellm@bv.com).

Sincerely,
BLACK & VEATCH Special Projects Corp.


Larry M. Campbell, P.E.
Site Manager

Enclosure

cc: Lowell Toole, USEPA VII
William Gresham, USEPA VII
Ray Herzog, BVSPC KC

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USEPA/RAC VII
American Chemical Services RAO (057-ROBF-05J7L1)

BVSPC Project 46526
BVSPC File C.3
April 24, 2001

Mr. Kevin Adler
U.S. Environmental Protection Agency
77 W. Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

Subject: Transmittal of Corrected Pages for Final
Work Plan for RA Oversight at the ACS
Superfund Site

Dear Mr. Adler:

Transmitted herewith are corrected pages for the final work plan for oversight of the remedial action being conducted by the Potentially Responsible Parties Group at the American Chemical Services Superfund site in Griffith, Indiana. Specifically, we provide corrected pages 2-5/2-6 in Volume 1 and page 2-1 in Volume 2. These pages have been corrected to indicate that only one BVSPC community relations specialist will attend the public meeting and availability sessions, as agreed during the negotiations conference call on April 12, 2001.

If you have any questions, please call (312-683-7856) or email (campbelllm@bv.com).

Sincerely,

BLACK & VEATCH Special Projects Corp.

Larry M. Campbell, P.E.
Site Manager

Enclosure

cc: Lowell Toole, USEPA VII
William Gresham, USEPA VII
Ray Herzog, BVSPC KC

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**FINAL WORK PLAN
VOLUME 1 - TECHNICAL APPROACH
OVERSIGHT OF PRP REMEDIAL ACTION ACTIVITIES
AMERICAN CHEMICAL SERVICES SITE
GRIFFITH, INDIANA**

EPA Work Assignment 057-ROBF-05J7
BVSPC Project No. 46526

April 16, 2001

Prepared By

Black & Veatch Special Projects Corp.
101 North Wacker Drive, Suite 1100
Chicago, Illinois 60606

Except for data contained on all pages of Volume 2 of this document, it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing hereon, the Government shall have unlimited rights (as defined in Contract No. 68-W5-0004) in and to the technical data contained in this document upon which this work assignment is based.

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OP Form 60

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1.0 Introduction

Black & Veatch Special Projects Corp. (BVSPC), under a Response Action Contract (RAC), has been tasked to provide oversight of the potentially responsible parties' (PRPs) group remedial action (RA) at the American Chemical Services Site in Griffith, Indiana, to support the U.S. Environmental Protection Agency (EPA) Region V

Activities set forth in this work plan will be carried out under EPA Contract No. 68-W5-0004, Work Assignment No. 057-ROBF-05J7. (Similar activities related to oversight of the PRP Groups remedial action (RA) from October 1997 through February 2001 were performed by BVSPC at the site under EPA Work Assignment 030-ROBF-05J7.) This work plan describes the tasks that the project team will perform in providing technical and administrative assistance to the EPA for a negotiated cost and fee. This work plan also presents the project schedule along with the projected costs associated with each task. *The text and spreadsheets in this Final Work Plan have been revised to incorporate the changes negotiated by EPA and BVSPC during the negotiations conference call on April 12, 2001.*

BVSPC's efforts and obligations under this work assignment are for the benefit of the EPA. The PRP Groups, their employees, contractors, or any other persons or entities are not third-party beneficiaries of this work assignment.

1.1 Site Location and Background

A brief description and history of the American Chemical Services site is included in the EPA's statement of work (SOW) for this work assignment, included in Appendix A. Detailed descriptions of the project site, including previous investigations, oversight activities, and remedial actions, have been provided to BVSPC by the EPA under the Region V Alternative Remedial Contracting Strategy (ARCS) Contract 68-W8-0064, Work Assignment 80-5PJ7 and under the Region VII RAC Contract 68-W5-0004, Work Assignments 029-ROBE-05J7 and 030-ROBF-05J7.

1.2 Purpose and Scope of Work

The purpose of this work assignment is to provide oversight of the PRP Groups' RA for the American Chemical Services site in accordance with all applicable regulations and guidance.

The EPA SOW identified the following work breakdown structure tasks for work assignment scoping, scheduling, and cost tracking purposes:

- Task 1 - Project Planning and Support
- Task 2 - Community Relations Technical Support
- *Task 3 - Data Acquisition / RD Oversight - N/A**
- *Task 4 - Analysis of Split Samples - N/A*
- *Task 5 - Analytical Support and Data Validation of Split Samples - N/A*
- *Task 6 - Data Evaluation of Split Samples - N/A*
- Task 7 - Review of PRP Group Remedial Action Documents
- Task 8 - Remedial Action Oversight.
- Task 9 - Technical Meeting Support.
- Task 10 - Work Assignment Closeout

This work plan describes the work associated with each task and the assumptions used in developing the cost estimate. General experience and past experience at the site have been considered in developing this work plan. Issues resolved in the work assignment kickoff meeting held on February 14, 2001, are incorporated in the assumptions.

*N/A = Not Applicable to the SOW of this WA.

2.0 Technical Approach

This section of the work plan describes the technical approach to the tasks to be performed under this work assignment. Work descriptions, where appropriate, indicate the technical approach and assumptions that affect the estimated level of effort (LOE). The activities outlined in EPA's December 18, 2000, SOW have been incorporated into this work plan, and will be performed under the following tasks:

- Task 1 - Project Planning and Support (BVSPC Task 46526.231)
- Task 2 - Community Relations Technical Support (BVSPC Task 46526.232)
- *Task 3 - Data Acquisition / RD Oversight (BVSPC Task 46526.233) - N/A*
- *Task 4 - Analysis of Split Samples (BVSPC Task 46526.234) - N/A*
- *Task 5 - Analytical Support and Data Validation of Split Samples (BVSPC Task 46526.235) - N/A*
- *Task 6 - Data Evaluation of Split Samples (BVSPC Task 46526.236) - N/A*
- Task 7 - Review of PRP Group Remedial Action Documents (BVSPC Task 46526.237)
- Task 8 - Remedial Action Oversight (BVSPC Task 46526.238)
- Task 9 - Technical Meeting Support (BVSPC Task 46526.239)
- Task 10 - Work Assignment Closeout (BVSPC Task 46526.240)

These EPA task numbers correspond to EPA's work breakdown structure (WBS) for the RAC program for performing RA oversight activities. They are also linked to BVSPC phase numbers and provide a manageable and efficient means of scoping, scheduling, and cost tracking work assignment activities. The task numbers will be used to account for both expended LOE hours and associated costs for project activities. The cost estimates for each of these tasks are presented in Volume 2 of this work plan. The LOE estimated for each task is summarized on Table 2-1 presented at the end of this section. *The LOE estimates included in Table 2-1 and in Volume 2 have been revised to reflect the results of the negotiations conference call on April 12, 2001.* Work assignment milestone and schedule information is presented in Section 5.0.

2.1 Task 1 - Project Planning and Support (BVSPC Task 46526.231)

Project management activities are planning and control tasks that ensure all work assignment activities are performed accurately, efficiently, and on schedule. Project management activities commenced in December 2000, when the work assignment was issued to BVSPC. Qualified personnel with appropriate professional backgrounds will be assigned to perform project tasks. Figure 2-1 identifies the key work assignment team members and the work assignment organization. The Site Manager (SM) has been BVSPC's SM for the American Chemical Services work assignment since September 2000 under the earlier Work Assignment 030-ROBF-05J7. The SM was also the ARCS V Program Manager when work at the site was performed under the ARCS V contract. Both the RAC VII Program Manager and Program QA Manager have provided limited technical support to previous RAC work assignments. The Project Geologist has extensive experience on the American Chemical Services site under the previous RAC VII work assignment. Resumes of key personnel are provided in Appendix B.

Although all reasonable efforts will be made to maintain continuity of personnel throughout this work assignment, the assistance of some technical specialists (e.g., engineers and scientists) is anticipated. The EPA work assignment manager (WAM) will be advised when assistance from technical specialists and changes to key project team are necessary to provide the enforcement support services described in this plan.

The SM will maintain project control and will be based out of BVSPC's Chicago, Illinois, office. The SM will be responsible for direction of the work, compliance with schedules and budgets, performance of project reviews, scheduling of independent reviews, content and format of deliverables, and day-to-day monitoring of project staff. The SM is also responsible for providing EPA technical, financial, and schedule status reports on a monthly basis throughout the duration of the work assignment. The Project Geologist, and others as appropriate, will assist the SM in these duties. The Project Geologist will be responsible for the day-to-day technical coordination of various work assignment activities.

The SM will discuss individual subtasks with the WAM before and after each work event to facilitate consistent and thorough cost control. Informal accounting of LOE and

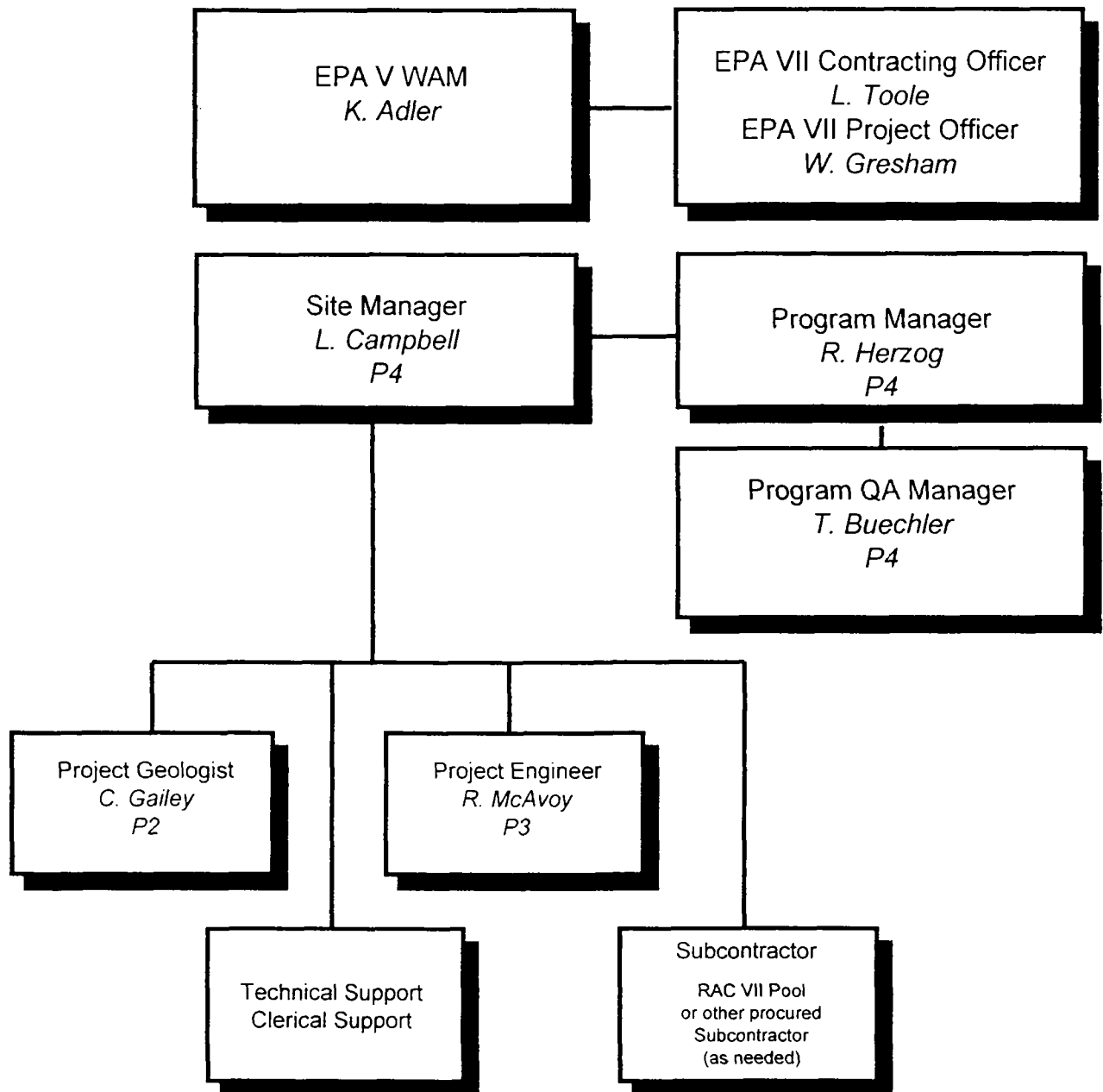


Figure 2-1
ACS RA Oversight Organizational Chart

costs will be provided at the request of the WAM for individual task events. If required, BVSPC can provide summaries of LOE and costs in weekly intervals using a cost accounting and project tracking system.

Quality assurance and quality control (QA/QC) will be carried out in accordance with BVSPC's corporate QA plan (approved by EPA for RAC work assignments). Ultimate responsibility for QA/QC rests with the SM, although various QA/QC personnel will assist the SM. Specific information regarding QA/QC procedures is contained in Section 4.0 of this work plan.

Activities representative of the project planning efforts that will be performed under this task include the following:

- Participate in work assignment kickoff meeting with EPA* (conducted February 14, 2001).
- Conduct a site visit, if deemed necessary (not needed; SM has visited the site during activities under the previous WA 030).
- Evaluate existing information (both EPA and PRP Group documents).
- Develop and submit this draft work plan by March 2, 2001 (as determined at the kickoff meeting).
- Participate in work plan fact finding/negotiations meeting (conducted April 12, 2001).
- Revise and submit the draft work plan based on the fact finding/negotiations meeting (completed April 16, 2001).
- Prepare revisions and/or updates to the existing BVSPC site specific Health and Safety Plan (HASP), and submit the revised plan to EPA.
- Perform monthly administration and reporting.
 - Maintain project files.
 - Monitor and track the progress of the project.
 - Coordinate staffing and other support activities.

*A conflict of interest (COI) disclosure letter dated October 10, 1997, was previously submitted to EPA for WA 029-ROBE-05J7 and 030-ROBF-05J7.

- Prepare monthly progress and financial status reports as follows:
 - Monthly Progress Reports (information summarized by task)
 - Activities and deliverables during the reporting period.
 - Project schedule and progress (including planned and actual start and completion dates, and estimates of percent complete).
 - Schedule variances and corrective actions.
 - Problem areas and recommended solutions.
 - Activities planned for the next reporting period.
 - Financial Status Reports (information summarized by task)
 - Project professional and clerical hours, and costs for the period and cumulative for the work assignment.
 - Estimated hours and costs to complete.
 - Actual and anticipated variances by task.
- Participate in necessary work assignment meetings.
 - Maintenance of day-to-day communication, as necessary, with EPA's WAM and BVSPC personnel concerning work assignment activities.
 - Work assignment planning meetings at EPA's offices, as required.
 - Participate in periodic Site Manager's meetings conducted by either EPA or BVSPC program personnel.

LOE projected for this task is summarized in Table 2-1 and presented in Volume 2.

2.2 Task 2 - Community Relations Technical Support (BVSPC Task 46526.232)

This task includes work efforts related to the implementation of the Community Relations Plan for the site. BVSPC will provide technical support during public/availability meeting(s) that are conducted (by others) under the associated community relations work assignment. This task shall be performed in accordance with *Community Relations in Superfund - A Handbook - June 1988*.

It is anticipated that BVSPC will provide support for one public meeting and two availability sessions (two per day) held on two different days. Each meeting will require

one BVSPC community relations specialist to be in attendance. An overnight stay is not anticipated for Chicago-based personnel, but may be required if BVSPC community relations or technical specialists from other offices are requested to attend the meetings. When attending public meetings and open houses, BVSPC employees will identify themselves as employees of an EPA contractor.

LOE projected for this task is summarized in Table 2-1 and presented in Volume 2.

2.3 Task 3 - Data Acquisition / RD Oversight (BVSPC Task 46526.233) - N/A

This task is not included in the SOW of this WA. Therefore, no LOE is projected for this task, as summarized in Table 2-1 and in Volume 2.

2.4 Task 4 - Analysis of Split Samples (BVSPC Task 46526.234) - N/A

This task is not included in the SOW of this WA. Therefore, no LOE is projected for this task, as summarized in Table 2-1 and in Volume 2.

2.5 Task 5 - Analytical Support and Data Validation of Split Samples (BVSPC Task 46526.235) - N/A

This task is not included in the SOW of this WA. Therefore, no LOE is projected for this task, as summarized in Table 2-1 and in Volume 2.

2.6 Task 6 - Data Evaluation of Split Samples (BVSPC Task 46526.236) - N/A

This task is not included in the SOW of this WA. Therefore, no LOE is projected for this task, as summarized in Table 2-1 and in Volume 2.

2.7 Task 7 - Review of PRP Group Remedial Action Documents (BVSPC Task 46526.237)

This task involves work efforts to review PRP Group RA documents. BVSPC will perform a technical review and generate comments in the form of technical memoranda. These memoranda will be submitted within 21 and 15 calendar days, respectively, of the start of the review of draft and final documents. BVSPC will consider the following factors during the review of documents:

- Technical requirements of the Record of Decision (ROD), ROD Amendment, Consent Decree (CD), and applicable or relevant and appropriate requirements (ARARs).
- Standard professional engineering practices.
- Applicable statutes, EPA policies, directives, and regulations.
- PRP Group RA work plan and other EPA-approved plans and specifications.
- Spot checking design calculations to assess accuracy and quality of design activities.
- Examination of planning and construction schedules for meeting project completion goals.

This task includes work efforts to review the following PRP Group RA documents:

- RA Work Plan, if a revision is submitted.
- Site Management Plan for Construction, if a revision is submitted.
- Operations & Maintenance (O&M) Manual (Meeting)*
- Remedial Action Report (Meeting).
- As-Built Drawings (Meeting).
- Construction Quality Assurance Project Plan (QAPP), if a revision is submitted.
- Construction QA Reports (Meeting).
- Construction Change Orders.
- Other Non-Specified PRP Group Technical Deliverable.

*BVSPC personnel shall participate in a review meeting for this document at the ACS site.

LOE projected for this task is summarized in Table 2-1 and presented in Volume 2.

2.8 Task 8 - Remedial Action Oversight (BVSPC Task 46526.238)

This task includes work efforts to provide technical field oversight of PRP Group activities to ensure construction and other RA activities take place in accordance with EPA-approved plans and specifications. The oversight activities will also include observations regarding the manner in which the Quality Assurance Plan and the HASP are implemented. BVSPC will also provide oversight of operations and maintenance (O&M) or long-term response actions performed by the PRP Group.

2.8.1 RA Oversight

BVSPC will oversee PRP Group construction efforts made during the length of the WA. The amount of oversight will be dependent upon the type and complexity of the RA and is at the discretion of the EPA WAM. EPA anticipates that oversight will be required 2 days per week for one BVSPC inspector; additional oversight effort by another BVSPC inspector may be required when multiple RA activities occur simultaneously. One of the 2 days/week of oversight will be scheduled to occur on the day of the weekly PRP Group construction meeting at the site (currently this meeting is scheduled at 10 AM on Thursdays). The second day of oversight can be at any other time when RA construction activities are planned to occur. Any non-conformance with the ROD, ROD Amendment, CD, plans, or other project documents shall be reported to the WAM. BVSPC SM will communicate with EPA WAM orally at least weekly during RA field work.

2.8.2 Ongoing Groundwater Sampling

Ongoing semiannual field oversight of PPR Group groundwater sampling events will be performed by BVSPC. EPA estimates there will be 10 separate sampling events, each lasting about 1 week. EPA anticipates that BVSPC oversight of 2 days/sampling event will be adequate and sufficient. This semiannual groundwater sampling oversight is in addition to the construction oversight described in Section 2.8.1. Split sampling will not

be required. BVSPC will prepare a groundwater sampling oversight report and will submit the report within 15 days after the completion of each sampling event.

Ongoing quarterly sampling (conducted between the semiannual sampling) will also be conducted by the PRP Group, but is expected to require only 1 to 2 days/sampling event. BVSPC oversight of these limited quarterly groundwater sampling events will be performed during the normal BVSPC oversight activities described in Section 2.8.1. Again, split sampling will not be required. Documentation of the 10 quarterly sampling events will be included the monthly oversight reports described below in Section 2.8.3.

2.8.3 Oversight Reports

During all oversight activities, BVSPC will maintain a field logbook of daily activities and will take photographs of RA activities. The BVSPC SM will communicate with the EPA WAM orally at least weekly during RA field work.

BVSPC will prepare monthly RA oversight reports during the period of PRP Group RA activities. The monthly oversight report will include a short summary of significant field events during the reporting period (including the quarterly groundwater sampling events described in Section 2.8.2), together with photographs taken and a copy of all field logs. The RA oversight report is expected to be less than 10 pages in length (on average) and will be submitted not later than 15 calendar days after the end of each reporting period.

BVSPC will prepare and submit a Final Summary Oversight Report within 30 calendar days after the completion of all field activities. The Summary Oversight Report will include a review of the work that was completed by the PRP Group and an evaluation as to whether the work met the requirements of the ROD, ROD Amendment, CD, and the design plans and specifications.

LOE projected for this task is summarized in Table 2-1 and presented in Volume 2.

2.9 Task 9 - Technical Meeting Support (BVSPC Task 46526.239)

This task includes work efforts to attend and document technical meetings with EPA, the PRP Group, the PRP Group's contractor, and the State Agency. When attending

meetings, BVSPC employees will identify themselves as employees of an EPA contractor. The meetings under this task are in addition to any meetings specifically included in other tasks of this work plan (e.g., Tasks 1, 7, and 8).

Based on direction from the WAM at the kickoff meeting, we have budgeted one meeting for each of four major RA task (e.g., extraction trenches, drum removal, ISVE, north and south area groundwater treatment). We have assumed that each meeting will be held at EPA offices, will last all day, and will be attended by two BVSPC personnel. In addition, the WAM estimated that we should budget for one technical meeting per year for each of the 4 years of the RA activities. We have assumed that each annual meeting will be held at EPA offices, will last all day, and will be attended by the BVSPC SM.

LOE projected for this task is summarized in Table 2-1 and presented in Volume 2.

2.10 Task 10 - Work Assignment Closeout (BVSPC Task 46526.240)

This task includes efforts related to work assignment closeout and includes the following:

- Provide necessary file duplication, distribution, and storage as directed by the EPA WAM, and in accordance with EPA's internal protocol to closeout the contract file for the work assignment. No microfiche will be required.
- Prepare a Work Assignment Closeout Report (WACR) in accordance with contract requirements and using the format to be specified by EPA Region VII.

A final cost estimate, if required by the WAM, will be developed that will incorporate the closeout activities requested by the EPA WAM at the time of closeout.

LOE projected for this task is summarized in Table 2-1 and presented in Volume 2.

Table 2-1
Work Assignment LOE Estimate
American Chemical Services Remedial Action Oversight

BVSPC PHASE	TASK DESCRIPTION	MANHOURS BY TASK						TOTAL	
		P4	P3	P2	P1	T2	T1	LOE	CLERICAL
231	PHASE NAME - PROJECT PLANNING AND SUPPORT								
	Kickoff	2	2	2	0	0	0	6	0
	Review Background Documents	0	30	30	0	0	0	60	0
	Develop Work Plan	6	50	20	0	4	0	80	10
	Revise/update HASP	2	8	16	0	2	0	28	4
	Monthly Reporting and Coordination	27	135	0	0	0	0	162	54
	Scoping, Planning, and SM Meetings	0	54	0	0	0	0	54	0
	TOTALS	37	279	68	0	6	0	390	68
232	PHASE NAME - COMMUNITY RELATIONS TECHNICAL SUPPORT								
	Public Meeting/Availability Session	0	24	12	0	0	8	44	0
	TOTALS	0	24	12	0	0	8	44	0
233	PHASE NAME - DATA ACQUISITION / RD OVERSIGHT								
		0	0	0	0	0	0	0	0
	TOTALS	0	0	0	0	0	0	0	0
234	PHASE NAME - ANALYSIS OF SPLIT SAMPLES								
		0	0	0	0	0	0	0	0
	TOTALS	0	0	0	0	0	0	0	0
235	PHASE NAME - ANALYTICAL SUPPORT AND DATA VALIDATION OF SPLIT SAMPLES								
		0	0	0	0	0	0	0	0
	TOTALS	0	0	0	0	0	0	0	0
236	PHASE NAME - DATA EVALUATION OF SPLIT SAMPLES								
		0	0	0	0	0	0	0	0
	TOTALS	0	0	0	0	0	0	0	0
237	PHASE NAME - REVIEW OF PRP GROUP RA DOCUMENTS								
	SOW Deliverables	0	95	340	0	0	0	435	35
	Technical Review Meetings	8	24	32	0	0	0	64	0
	TOTALS	8	119	372	0	0	0	499	35
238	PHASE NAME - REMEDIAL ACTION OVERSIGHT								
	RA Field Oversight	0	208	2,496	1,664	0	0	4,368	0
	Additional RA Field Oversight	0	0	624	416	0	0	1,040	0
	Intense RA Field Oversight	0	384	0	0	0	0	384	0
	Groundwater Sampling Oversight	0	10	120	80	0	0	210	0
	Groundwater Oversight Reports	0	10	36	24	0	0	70	20
	Monthly RA Oversight Reports	0	96	346	230	0	0	672	96
	Final RA Summary Report	4	20	48	32	20	0	124	20
	TOTALS	4	728	3,670	2,446	20	0	6,868	136
239	PHASE NAME - TECHNICAL MEETING SUPPORT								
	Technical Meeting Support	0	84	64	0	0	0	148	0
	Annual Technical Meeting	0	64	64	0	0	0	128	0
	TOTALS	0	148	128	0	0	0	276	0
240	PHASE NAME - WORK ASSIGNMENT CLOSE OUT								
	File Management	4	26	10	10	0	0	50	8
	Work Assignment Close Out Report	5	0	2	0	0	0	7	1
	TOTALS	9	26	12	10	0	0	57	9
	GRAND TOTALS	58	1,324	4,262	2,456	26	8	8,134	248

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3.0 Safety and Contingency Plan

The SOW requires field activities to support the oversight of the PRP Groups' RA efforts. The SOW states that the site-specific Health and Safety Plan (HASP) previously developed by BVSPC under its RAC contract will be revised and/or updated (as necessary) and utilized during the RAC VII work assignment to address safety issues during the oversight activities. All the necessary activities for the development of the HASP are included under Task 1, described in Section 2.1.

As with any project, problems and issues arise that must be resolved to complete project tasks in a timely manner. To counter such areas of concern, this contingency plan has been developed. Several specific issues have been listed to demonstrate how these issues will be addressed during the course of the work assignment. While this list is not all-inclusive of the problems or issues that may arise, it offers insight on how such areas of concern will be handled.

Potential Issue	Contingency Plan
Subtask elements of this work assignment that are not fully scoped at this time.	Commence work efforts and revise the work plan and cost estimates in a timely manner for negotiations with the EPA.
Changes in program functions.	Consult with EPA WAM and BVSPC program personnel, as appropriate, and incorporate new guidance into project deliverables.
Community objections.	Work with EPA WAM to prepare alternative recommendations or support efforts to justify actions to the community, or both.
Schedule changes or delays due to PRP Group preparation of documents, concurrent reviews by EPA, or community involvement in the process.	Coordinate with EPA WAM and adjust project schedule and period of performance to support EPA as work assignment proceeds.
Access to sampling locations is refused or not granted in a timely manner.	Work with EPA WAM to adjust the field data collection program in a timely manner so as not to advertently affect the project schedule.

4.0 Quality Control Measures

QA/QC measures related to the work activities conducted on this assignment will be in accordance with the procedures defined in BVSPC's corporate QA Plan (approved by EPA for RAC work assignments). The corporate QA Plan defines the authority, responsibilities, and procedures for QA/QC. All major deliverables will be reviewed by quality assurance review team personnel assembled for each subtask of this work assignment. The comments of the review team will be incorporated into deliverables before submission to EPA. This procedure should expedite EPA's review of documents by ensuring the technical quality of both draft and final deliverables.

BVSPC's RAC Program QA/QC Manager will be responsible for the management and performance of internal review processes. The Program QA/QC Manager will also audit work performed in conjunction with this work assignment. The results of any audits performed on this work assignment will be submitted to BVSPC's RAC Program Manager. The audit report will contain a brief description of the audit; identification of compliance status, problems, and non-conformances; and analysis of corrective action status if appropriate.

Ultimate responsibility for QA/QC rests with the SM, although various QA/QC personnel will assist the SM as discussed above. The SM will be responsible for verifying that the work meets the QA requirements associated with the assignment and will initiate the project quality control reports and reviews. The SM, in conjunction with the Program QA Manager or BVSPC's Director of QA, will identify appropriate quality assurance review team personnel for the various deliverables to be submitted as part of this work assignment.

QC personnel, as necessary, will consist of an independent reviewer and a flexible, multi-disciplinary review team able to provide input in their areas of specialization. When desired by the Program QA Manager, independent review of deliverables will be conducted to ensure they are accurate, easy to understand, and free of typographical and mathematical errors. As necessary, the QA Manager may also participate in both project planning and review of deliverables, and provide input at meetings or telephone conferences arranged to discuss review comments. In any case, review of deliverables will

ultimately be at the discretion of the SM and always in response to specific requests by the EPA WAM. Copies of all review records will be maintained by the SM in accordance with the BVSPC QA Plan. Listed below are the review requirements for the deliverables associated with this work assignment. These requirements also comply with the BVSPC corporate QA Plan.

Document/Deliverable	Discipline Review	Project Review	Independent Review
Work Plan	O	R	R
<i>COI Certification*</i>	<i>O</i>	<i>R</i>	<i>O</i>
Health and Safety Plan	O	R	R
<i>Field Sampling Plan*</i>	<i>O</i>	<i>R</i>	<i>R</i>
<i>Quality Assurance Project Plan*</i>	<i>O</i>	<i>R</i>	<i>R</i>
Technical Oversight Reports	O	R	O
Data Evaluation Reports	O	R	O
PRP Group RA Work Plan Reviews	O	R	O
PRP Group Site Construction Completion Report Review	O	R	O
PRP Group As-built Drawings Review	O	R	O
PRP Group O&M Plans Review	O	R	O
Work Assignment Closeout Report	O	R	O
NOTE: O = Optional Review R = Required Review			
* Document not required in this WA.			

5.0 Project Milestones

5.1 Project Schedule

The anticipated project schedule for this work assignment is discussed below. If submittal criteria are not listed, then the submittal date will be determined when the EPA assigns the task. Project deliverables will be submitted as indicated in the SOW and as shown below.

5.2 Project Deliverables

Specific project deliverables are as follows (number of copies of deliverable):

- Work Plan - March 2, 2001 (3 copies).
- Revised Work Plan - 15 days after meeting/agreement of EPA comments (negotiations conference call on April 12, 2001; Final Work Plan on April 16, 2001) (3 copies) .
- *Conflict Of Interest check - October 10, 1997 (completed) N/A.*
- Updated/revised HASP - 30 days after work plan approval (3 copies).
- *Updated/revised FSP - N/A*
- *Updated/revised QAPP - N/A*
- Monthly Progress Reports - Per contract (3 copies).
- Comments on PRP Group Site Management for Construction document - 21 and 15 days, respectively, after receipt of draft and final documents (1 copy).
- Comments on PRP Group RA Workplan Documents - 21 and 15 days, respectively, after receipt of draft and final document (1 copy).
- Comments on PRP Group O&M Manuals - 21 and 15 days, respectively, after receipt of draft and final document (1 copy).
- Comments on PRP Group RA Report - 21 and 15 days, respectively, after receipt of draft and final document (1 copy).
- Comments on PRP Group As-Built Drawings - 21 and 15 days, respectively, after receipt of draft and final document (1 copy).

- Comments on PRP Group Construction QAPP - 21 and 15 days, respectively, after receipt of draft and final document (1 copy).
- Comments on PRP Group Construction QA Reports - 21 and 15 days, respectively, after receipt of draft and final document (1 copy).
- Comments on two PRP Group Change Orders - As negotiated with WAM (1 copy).
- Comments on PRP Group non-specific technical deliverable - 21 and 15 days, respectively, after receipt of draft and final document (1 copy).
- Semiannual Groundwater Monitoring Oversight Reports - 15 days after each sampling event (1 copy).
- Monthly RA Oversight Reports - 15 days after each monthly field oversight event (1 copy).
- Final Summary Field Oversight Report - 30 days after the end of all field oversight activities (2 copies).
- Work Assignment Closeout Report - As directed in the Work Assignment Closeout Notice (3 copies).

The criteria for the deliverable due dates are listed in Section VI of the SOW (see Appendix A). The deliverable dates listed above are subject to adjustment based on the schedule and actual completion dates of preceding tasks and subtasks, including the dates when PRP Group documents are received by EPA and provided to BVSPC. The need for schedule adjustments will be addressed in monthly status reports or other communications with the EPA WAM.

6.0 Cost Estimate

The estimated work assignment costs are based on projected LOE hours as shown in Table 2-1 and other cost considerations. Volume 2 of this work plan provides a detailed cost estimate by task and subtask for the anticipated project activities. Some cost assumptions for each task are presented in Section 2.0 of this work plan, and additional cost assumption details are provided in Volume 2. *The LOE estimates included in Table 2-1 and in Volume 2 have been revised to reflect the results of the negotiations conference call on April 12, 2001.*

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7.0 Subcontractors/Consultants

There is no known need for subcontractors to assist BVSPC during the conduct of this WA. Should subcontractors be required, existing RAC VII subcontractors (e.g., laboratories) could be tasked to assist BVSPC. Alternatively, other specialized subcontractors or consultants can be competitively procured if needed.

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8.0 Exceptions to Assignment, Anticipated Problems, and Special Requirements

All exceptions to this work assignment have been identified in this work plan. At this time, the only exceptions presented in this work plan pertain to how the PRP Group documents will be presented (e.g., a series of task-specific documents or a single final document). However, if unforeseen factors arise, or if the current SOW is changed, adjustments will be made to accommodate those changes. It is understood that such changes require the approval of the EPA Contracting Officer.

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APPENDIX A
STATEMENT OF WORK

STATEMENT OF WORK FOR REMEDIAL ACTION OVERSIGHT

American Chemical Service, Inc., Griffith, IN

December 18, 2000

Revised February 20, 2001

I. Introduction

Site Description

The American Chemical Service, Inc. site (ACS site) is located at 420 S. Colfax Ave., Griffith, Indiana, and is comprised of 19 acres of American Chemical Service, Inc.-owned or leased property which includes the so-called "Off-Site Containment" and the "On-Site Containment" areas, the 2-acre property known as the "Kapica-Pazmey" property, and a 15-acre portion of the Griffith Municipal Landfill. Groundwater contaminant plumes emanate from the ACS site and site wastes have impacted certain nearby wetland areas.

American Chemical Service, Inc. (ACS) began a solvent recovery business on the ACS property in May 1955. ACS's past waste handling, storage, and disposal practices led to the contamination of the site (except for the Town of Griffith Landfill area and the Kapica-Pazmey area), to the extent described in the 1992 ROD and other documents. ACS ceased its solvent reclaiming activities upon losing its interim (authorization to operate) status under the Resource Conservation and Recovery Act (RCRA) in 1990, although it continues its specialty chemical manufacturing operations to this day.

USEPA completed a remedial investigation at the site and issued a Record of Decision (ROD) for site cleanup in September 1992. Later, USEPA issued an amended ROD (1999) to change the selected full treatment remedy to a containment and treatment remedy. Subsequently, USEPA reached an agreement with 40 potentially responsible parties who will privately undertake the cleanup at the ACS site. The Consent Decree obligates the 40 parties to perform the tasks listed below (see Description of the RA).

Purpose

The purpose of this work assignment is to obtain contractor support for the oversight of the remedial action (RA) at the ACS Superfund site. Implementation of the RA at the site shall be performed by a PRP Group.

Description of the RA

The work to be implemented by the PRP Group is described in the Final Design Report and includes, but is not limited to, the following components:

- a. The excavation of approximately 400-2000 drums in the On-site Containment area with shipment off site for incineration of the contents.
- b. The implementation of soil vapor extraction (SVE) of VOC-contaminated soils in the buried waste in the On-site Containment area, the Off-Site Containment Area, and the Kapica-Pazmey Area.
- c. The construction of a groundwater extraction and treatment system capable of dewatering the areas of the site targeted for SVE and also containing the off-site groundwater contaminant plume. Treated water would be discharged to the wetlands.
- d. The excavation of wetlands soil/sediment containing greater than 1 ppm PCBs and consolidation on-site beneath the a soil cover with soil/sediment containing PCBs at 50 ppm or greater disposed of off-site.

- e. The installation of a subsurface barrier (slurry) wall between the Off-site and On-site Containment Areas to divide the site in half (to aid in dewatering the areas to allow for operation of the SVE).
- f. The maintenance of the previously installed subsurface barrier wall around the ACS site to minimize the movement of site contaminants off-site and to impede groundwater flow into the site and the pumping of groundwater from within the area surrounded by the slurry wall to maintain an inward groundwater gradient across the wall, where technically practicable. Contaminant source areas would be covered with a soil cap to reduce the infiltration.
- g. The implementation of long term groundwater monitoring, including private well sampling. Impacted wells would be subjected to closure or the owner would receive groundwater-use advisories.
- h. The testing of "ORC" or similar in-situ groundwater cleanup technologies, including monitored natural attenuation, to determine if any of these technologies can be substituted for the extraction and treatment remedy.

Objectives of Oversight. The primary objective of PRP oversight is to ensure that the remedies installed during the remedial action (RA) protect public health and the environment during the life of the project and are implemented in compliance with the terms of the Settlement Agreement. Oversight meets its objectives by observing and documenting that the PRP Group has complied with all applicable laws, regulations, and requirements, and has met all performance standards specified in the Settlement Agreement.

General Requirements

The contractor shall conduct the RA Oversight in accordance with this SOW and to ensure consistency with the ROD and ROD amendment, the Consent Decree, the *Remedial Design and Remedial Action Handbook (DRAFT)* (USEPA Office of Solid Waste and Emergency Response Directive, August 1993) and all other guidance used by USEPA in conducting an RD/RA. See references listed in Attachment 3.

A summary of the major deliverables and the schedule for submittal is attached. See Attachment 1.

The contractor shall furnish all necessary and appropriate personnel, materials, and services needed, or incidental to, performing and completing the RA oversight. This especially includes personnel familiar with construction procedures, groundwater and air sampling and analysis requirements, previous ACS site oversight activities, and wetlands restoration.

A list of primary guidance and reference material is attached. See Attachment 3. In all cases, the contractor shall use the most recently issued guidance.

The contractor shall maintain oversight files as specified in the contract and by the Work Assignment Manager or Remedial Project Manager (WAM/RPM). The WAM/RPM may periodically audit the site files and record-keeping procedures.

The contractor shall communicate at least weekly with the WAM/RPM, either in person or through conference calling, to report on oversight progress.

The contractor shall notify the WAM/RPM when 75 percent in accordance with the contract and when 95 percent of the approved work assignment budget has been expended.

USEPA will provide oversight of PRP Group contractor activities throughout the RA oversight efforts. USEPA review and approval of the contractor's deliverables is a tool to assist this process and to satisfy, in part, USEPA's

responsibility to provide effective protection of public health, welfare, and the environment during the Contractor's oversight of the PRP Group's remedial activities. USEPA will review the deliverables prepared during the course of the work assignment to assess the likelihood that the RA will achieve its remediation goals and that all performance requirements applicable to the RA have been correctly identified and implemented. However, acceptance of deliverables by USEPA does not relieve the contractor of responsibility for the adequacy of the deliverable.

This is a TERM FORM work assignment requiring the contractor to devote a specified level of effort hours for the approved tasks. The contractor will not expend LOE hours nor incur additional cost for activities prior to receiving the Contracting Officer's written approval.

In conducting this work assignment EPA expects the contractor to propose the most appropriate and cost-effective procedures and methodologies using accepted practices and controls. Throughout the performance on this work assignment, the contractor will be responsible for performing services and providing products using the most cost-efficient mix of qualified personnel applicable to meet the needs of the work assignment. The technical volume of the work plan should include the personnel assigned to the project, resume and respective duties associated with the work assignment.

Record-Keeping Requirements

The contractor shall maintain all technical and financial records for the RA Oversight work assignment in accordance with the contract. At the completion of the work assignment, the contractor shall submit 1 copy of the official record of the remedial action oversight in hard copy form in accordance with the information contained on the Work Assignment Completion Notification (WACN).

Equipment Transfer - N/A

USEPA Primary Contact

The USEPA primary contact for this work assignment is Kevin Adler, who is the Remedial Project Manager (RPM). He can be reached via telephone at (312) 886-7078, via telefax at (312) 353-5514, and via the Internet at adler.kevin@epamail.epa.gov. His mailing address is U.S. EPA Region V, Mailcode: SR-6J, 77 West Jackson Blvd., Chicago IL 60604. The secondary contact for this work assignment is Larry Schmitt, Tel. (312) 353-6565, Fax. (312) 353-5514, Internet Address schmitt.lawrence@epamail.epa.gov. The Contracting Officer (CO) is Lowell Toole. He can be reached via telephone at (913) 551-7639. The Project Officer (PO) is Bill Gresham. He can be reached via telephone at (913) 551-7804.

WA Completion Date & Project Closeout

The completion date for this work assignment is estimated to be June 30, 2005. At the completion of the work assignment, the contractor shall perform all necessary project work assignment closeout activities as specified in the Contract. These activities may include closing out any subcontracts, indexing and consolidating project records and files as required above, and providing a technical and financial closeout report to USEPA.

II. Work Assignment Tasks

Task 1 Project Planning and Support

1.1 Project Planning. This task includes efforts related to project initiation.

1.1.1 Attend Kickoff Meeting. -- The Contractor shall contact the WAM within 5 calendar days after

receipt of the work assignment to schedule the kickoff meeting. The Contractor shall attend a kickoff meeting to be held at the U.S. EPA Region 5 Office in Chicago (with the PO and CO attending via conference call).

1.1.2 Conduct Site Visit. -- The Contractor shall, if it is using personnel unfamiliar with the site and the RA-oversight underway, conduct a 1-day site visit with the WAM during the project planning phase to develop a conceptual understanding of the site and the RA oversight scope and requirements.

1.1.3 Evaluate Existing Information. -- The Contractor shall obtain, copy, and review available information pertaining to the site from USEPA. The Contractor shall obtain the necessary information from the WAM or the USEPA Records Center. The Contractor shall evaluate the existing data and documents, including:

- 1990 Record of Decision and 1999 ROD Amendment
- 2000 Consent Decree with Statement of Work
- 1999-2000 Approved Final Design Report
- PRP Health & Safety Plan
- PRP Sampling & Analysis Plan/QAPP

1.1.4 The contractor shall prepare and submit a RA Oversight Work Plan within 30 calendar days after receipt of the work assignment (WA). The contractor shall use information from the USEPA-approved PRP Work Plan, appropriate USEPA guidance, and technical direction provided by the USEPA WAM as the basis for preparing the RA Oversight Work Plan. RA oversight work must be coordinated and properly sequenced with USEPA and PRP RA activities. The contractor shall submit one copy of the work plan to the Contracting Officer (CO), Project Officer (PO) and Work Assignment Manager (WAM).

The RA Oversight Work Plan shall include a comprehensive description of project tasks, the procedures to accomplish them, project documentation, and project schedule. The Contractor shall use their quality assurance/quality control (QA/QC) systems and procedures to assure that the work plan and other deliverables are of professional quality requiring only minor revisions. Specifically, the Work Plan shall include the following:

- ◆ Identification of RA project elements and the associated oversight tasking including review of PRP planning, design, and activity reporting documentation; field sampling and analysis activities, and treatability study activities. Output of this task will be a detailed work breakdown structure of the RA oversight project.
- ◆ The Contractor's technical approach to each task to be performed, including a detailed description of each task; the assumptions used; any information to be produced during and at the conclusion of each task; and a description of the work products that will be submitted to USEPA. Information shall be presented in a sequence consistent with SOW.
- ◆ A schedule with specific dates for completion of each required activity and submission of each deliverable required by the SOW. This schedule shall also include information regarding timing, initiation, and completion of all critical path milestones for each activity and deliverable and the expected review time for USEPA.
- ◆ A list of key Contractor personnel providing support on the work assignment.

1.1.5 Prepare Revised Oversight Work Plan (if necessary)

The Contractor shall prepare and submit a revised work plan incorporating the agreements made in the fact finding/negotiation meeting (below).

1.1.5.1 Attend Fact Finding/Negotiation Meeting

The Contractor shall attend a Work Plan fact finding/negotiation meeting via conference call with the Region 5 office. USEPA and the Contractor will discuss and agree upon the final technical approach and costs required to accomplish the tasks outlined in the SOW.

1.2 Preparation of Site-Specific Plans

- Update the Health and Safety Plan (HASP). The contractor shall prepare an updated site-specific HASP that specifies employee training, protective equipment, medical surveillance requirements, standard operating procedures, and a contingency plan in accordance with 29 CFR 1910.120 1(1) and (1)(2). If the HASP prepared under the RAC contract is adequate for the work to be performed under this WA, then the contractor shall incorporate that document by reference and not redo the document.
- Update the Sampling and Analysis Plan (SAP). -- N/A
- Update the Quality Assurance Project Plan (QAPP). -- N/A

1.3 Project Management

The contractor shall perform general work assignment management including management and tracking of costs, preparation of Monthly Progress Reports, attendance at project meetings, and preparation and submittal of invoices. It is anticipated that the period of performance for this project is from December 1, 2000 through June 30, 2005, with closeout proceedings likely beginning around January 1, 2005.

If the contractor finds that the RA differs significantly from the ROD or ROD amendment, the construction or implementation is not consistent with the design, requirements delineated within the Consent Decree are not being met, or that there are compliance issues with applicable or relevant and appropriate requirements (ARARs) at any point in the process, the contractor shall notify the WAM/RPM immediately to describe the issue.

1.3.1 Prepare Monthly Status Reports. The contractor shall prepare monthly progress reports in accordance with the requirements under the contract.

1.3.2 Meetings. The contractor shall participate in progress meetings with USEPA during the course of the work assignment. For budgeting purposes, the contractor shall assume 4 meetings, with 1-2 people in attendance, for 1-4 hours.

1.4 Subcontract Procurement and Support Activities. -- N/A

Task 2 Community Relations Technical Support

This task includes technical support provided by the contractor during public/availability meeting(s) under the associated community relations work assignment. The contractor shall provide community relations

support to USEPA throughout the RA in accordance with *Community Relations in Superfund—A Handbook*, June 1988. It is estimated that overnight travel will not be required.

Task 3 Data Acquisition/RD Oversight -- N/A

Task 4 Analysis of Split Samples -- N/A

Task 5 Analytical Support and Data Validation of Split Samples -- N/A

Task 6 Data Evaluation of Split Samples -- N/A

Task 7 Review of PRP Group Remedial Action Documents

This task involves work efforts to review and comment on PRP Group RA submittals. The contractor shall perform reviews to focus on the technical and engineering merit. Comment reports shall be submitted upon the completion of each review by the oversight contractor within 21 calendar days of the start of the review, identifying specific issues and suggested corrective action. The following factors are to be considered during the review of all PRP Group submittals:

- ▶ Technical requirements of the ROD/ROD amendment, CD, and compliance with ARARs
- ▶ Standard professional engineering practices
- ▶ Applicable statutes, USEPA policies, directives and regulations
- ▶ Spot checking design calculations to assess accuracy and quality of design activities, if any
- ▶ Examination of planning and construction schedules for meeting project completion goals

The contractor shall review the PRP Group-prepared remedial action project documentation to ensure professional quality, technical accuracy, compliance with the PRP Group RA Work Plan, the ROD/ROD amendment, Consent Decree, approved plans and specifications, CERCLA, and all ARARs.

7.1 Review of PRP PreDesign documents -- N/A

7.2 Review of PRP Remedial Design Documents -- N/A

7.3 Review PRP Group Remedial Action Documents. The contractor's review of PRP Group documents should be focused on the technical and engineering aspects of the detailed construction-related submittals. The review shall ensure professional quality, technical accuracy, and compliance with the PRP Group RA Work Plan, the ROD/ROD amendment, Consent Decree, approved plans and specifications, CERCLA, and all ARARs. Letter reports shall be submitted upon the completion of each review by the contractor within 21 calendar days of the start of the review, identifying specific issues and suggested revision or other action. For budgeting purposes, the contractor shall review the PRP Group remedial action implementation schedule to determine which of the deliverables anticipated under Task 7 may be submitted concurrently by the PRP Group, and therefore, the review meetings would be concurrent rather than separate.

- **Site Management for Construction.** The contractor shall review and provide comments on the PRP Groups's Site Management for Construction document, if a revision is submitted.

- PRP Group's Remedial Action Work Plan. The contractor shall review and provide comments on the PRP Group's RA Work Plan, if a revision is submitted.
- O&M Manual. The contractor shall review and provide comments on the PRP Group's draft O&M Manual. The contractor shall participate in a O&M Manual review meeting. The meeting shall take place at the site and may last up to 4 hours. It is anticipated that approximately 1 - 2 contractor personnel shall be in attendance at the meeting. The contractor shall review and provide comments on the final O&M Manual.
- Remedial Action Report. The contractor shall review and provide comments on the PRP Group's RA Report. The contractor shall participate in a RA Report review meeting. The meeting shall take place at the site and may last up to 4 hours. The contractor shall review and provide comments on the final RA Report.
- As-Built Drawings. The contractor shall review and provide comments on the PRP Group's draft As-Built Drawings. The contractor shall participate in an As-Built Drawings review meeting. The meeting shall take place at the site and may last up to 4 hours. The contractor shall review and provide comments on the final As-Built Drawings.
- Construction QAPP. The contractor shall review and provide comments on the PRP Group's draft Construction QAPP, if there are any revisions.
- Construction QA Reports. The contractor shall review and provide comments on the PRP Group's Construction QA Reports. The contractor shall participate in a QA Report review meeting. The meetings shall take place at the site and may last up to 4 hours.
- Change Orders. The contractor shall review and provide comments on the PRP Group's construction change orders. The contractor shall assume review of 2 construction change orders.
- Other Non-Specific PRP Group Technical Deliverables. The contractor shall budget for review of one additional, as-yet-unknown PRP Group Technical Deliverable.

Task 8 Remedial Action Oversight

The contractor shall provide technical oversight of PRP Group activities to ensure construction and other remedial action activities take place in accordance with EPA accepted plans and specification. The oversight activities shall also include observations regarding the manner in which the Quality Assurance and Health & Safety Plans are implemented. The amount of oversight will be dependent upon the type and complexity of the RA and is at the discretion of the EPA WAM. The contractor shall provide oversight of O&M or Long-term Response Actions performed by the PRP Group. Any non-conformance with the ROD/ROD amendment, CD, Plans, or other project documents shall be reported to the WAM.

- 8.1 RA Oversight. The Contractor shall oversee any PRP construction efforts made during the length of the WA. The Contractor shall be present on site observing RA work at least 2 days per week during the RA oversight WA. Additional oversight may be required if warranted as directed by the WAM. Split sampling during the RA oversight is not required. The Contractor shall use the approved PRP RA schedule to determine the Contractor's need for scheduling field oversight. Lastly, the Contractor shall provide verbal communications to the WAM at least once per week during the PRP's field work.

8.2 On-Going Semi-Annual Field Oversight. The contractor shall perform semi-annual oversight to oversee PRP groundwater sampling efforts. It is anticipated that there will be 10 separate sampling events each lasting approximately 1 week in length.

8.3 Periodic /Final Reports.

- The contractor shall provide RA oversight reports once every month during the duration of the PRP Group's field work. The contractor's oversight reports shall consist of a short summary of significant field events during the period, any photographs taken during the period, and a copy of all field logs. Each field oversight report shall be submitted 15 calendar days after each monthly period and is anticipated to be less than 10 pages in length on average.
- Final Summary Report. The contractor shall provide a summary oversight report 30 calendar days after the end of all field activities. The summary field report shall include a review of the work that was completed and an evaluation as to whether the work met the requirements of the ROD/ROD amendment, Consent Decree, and the design plans and specifications.

Task 9 Technical Meeting Support

This task includes work efforts related to attendance at and documentation of meetings with USEPA, the PRP Group, the PRP Group contractor, and the State Agency. The contractor shall attend various meetings throughout the performance of the work assignment. These meetings are in addition to the meetings specifically included within other tasks in this SOW. Meetings may be scheduled to coincide with the following specific milestones during the RA: at the PRP Group RA revised work plan review or technical status meetings with the PRP Group.

Task 10 Work Assignment Closeout

The contractor shall perform the necessary activities to close out work assignment in accordance with contract requirements.

- Package and Return Documents to Government. The contractor shall package and return all documents to EPA.
- Prepare Closeout Report. The contractor shall prepare a Work Assignment Closeout Report (WACR). The WACR shall include all LOE by p-level and costs in accordance with the WBS.

III. Schedule of Deliverables/Milestones

See Attachment 1.

IV. Performance Criteria

The contractor's deliverables will be inspected by the government for acceptability. Unacceptable deliverables will be returned to the contractor with comments and directions for necessary corrections or rework which may be applicable.

In addition, the contractor's performance shall be evaluated by the Agency in order to determine the amount of performance fee which should be provided to the contractor for performance of the work assignment. The amount of fee will be predicated upon the government's subjective evaluation of the contractor's ability to perform

this work assignment.

Of primary importance is the contractor's ability to address and implement EPA Regional and HQ comments and concerns on the draft package and submit final packages which incorporate these comments and concerns fully.

Performance fee may be provided, at the Agency's discretion, to the contractor at the end of this work assignment. Performance fee will only be provided if the contractor is rated "exceeds expectations" or "outstanding" on the work assignment.

V. Acceptance Criteria

See Attachment 2 for acceptance criteria for the deliverables under this work assignment.

Attachment 1
Summary of Major Submittals for the Remedial Action Oversight at the
American Chemical Service, Inc. Site, Griffith, IN

TASK	DELIVERABLE	NO. OF COPIES	DUE DATE (calendar days)
1.1.4	RA Oversight Work Plan	3	30 days after receipt of work assignment (WA)
1.1.5	Revised RA Oversight Work Plan (if necessary)	3	15 days after meeting/agreement of USEPA comments
1.1.5.1	Comments on PRP HASP	0	N/A
1.1.5.2.1	Comments on PRP QAPP	0	N/A
1.1.5.2.2	Comments on PRP FSP	0	N/A
1.2.1	Contractor HASP	3	30 days after Work Plan approval
1.2.2	Sampling & Analysis Plan	0	N/A
1.2.3	QAPP	0	N/A
1.3.1	Monthly Progress Reports	3	In accordance with the requirements of the contract
1.3.1	Ad hoc financial information requests	1	14 days after WAM request
5.5	Summary Table(s), Validation Worksheets, DQO Summary Forms	0	N/A
6.4.1	Data Evaluation Summary Report	0	N/A
7.3.1	Comments on draft PRP Site Management for Construction (SMC)	1	21 days after receipt of PRP SMC
7.3.1	Comments on final PRP SMC	1	15 days after receipt of PRP document
7.3.2	Comments on draft PRP RA Work Plan	1	21 days after receipt of PRP RA Work Plan
7.3.2	Comments on final PRP RA Work Plan	1	15 days after receipt of PRP document
7.3.3	Comments on draft PRP O&M Manual	1	21 days after receipt of PRP O&M Manual

TASK	DELIVERABLE	NO. OF COPIES	DUE DATE (calendar days)
7.3.3	Comments on final PRP O&M Manual	1	15 days after receipt of PRP document
7.3.4	Comments on draft PRP RA Report	1	21 days after receipt of PRP RA Report
7.3.4	Comments on final PRP RA Report	1	15 days after receipt of PRP document
7.3.5	Comments on draft PRP As-Built Drawings	1	21 days after receipt of PRP As-Built Drawings
7.3.5	Comments on final PRP As-Built Drawings	1	15 days after receipt of PRP document
7.3.6	Comments on draft PRP Construction QAPP	1	21 days after receipt of PRP Construction QAPP
7.3.6	Comments on final PRP Construction QAPP	1	15 days after receipt of PRP document
7.3.7	Comments on PRP Construction QA Reports	1	21 days after receipt of PRP Construction QA Reports
7.3.8	Comments on PRP Change Orders	1	As negotiated with WAM
7.3.9	Comments on PRP non-specific technical deliverables	1	21 days after receipt of documents from PRPs and review request from WAM
8.3.1	Periodic Field Oversight Reports	1	15 days after each monthly field oversight event.
8.3.2	Final Summary Field Oversight Report	2	30 days after the end of all field oversight activities
10.2	Work Assignment Closeout Report	3	As directed in Work Assignment Closeout Notification

Attachment 2

A2. I. PERFORMANCE CRITERIA

The contractor's deliverables will be inspected by the government for acceptability. Unacceptable deliverables will be returned to the contractor with comments and directions for necessary corrections or rework which may be applicable.

In addition, the contractor's performance shall be evaluated by the Agency in order to determine the amount of performance fee which should be provided to the contractor for performance of the work assignment. The amount of fee will be predicated upon the government's subjective evaluation of the contractor's ability to perform this work assignment. A performance fee may be provided, at the Agency's discretion, to the contractor at the end of this work assignment. A performance fee will only be provided if the contractor is rated "exceeds expectations" or "outstanding" on the work assignment.

A2. II. ACCEPTANCE CRITERIA

The following table presents the acceptance criteria for the deliverables under this work assignment:

TASK	DELIVERABLE/SERVICE	CRITERIA
1.1.4	RA Oversight Work Plan	Good conceptual understanding of the site and project goals, technically sound and defensible plan which is well justified and supported. Follows SOW and is inclusive of all tasks with no addition of unnecessary work. Timely, complete, and accurate.
1.2.1	Contractor HSP	Consistent with 29 CRF 1910.120 and other applicable OSHA requirements.
1.3.1	Monthly reports/invoices	As per contract specifications; detailed narrative of specific tasks and subtask activities sufficient enough for WAM to evaluate WA progress. Thorough, complete, and accurate.
8.3.1	Periodic Field Oversight Reports	As per contract specifications; detailed narrative of specific tasks and subtask activities sufficient enough for WAM to evaluate WA progress. Thorough, complete, and accurate.
8.3.2	Final Summary Field Oversight Report	As per contract specifications; detailed narrative of specific tasks and subtask activities sufficient enough for WAM to evaluate WA progress. Thorough, complete, and accurate.
7.3	Comments on draft and final PRP documents	Document review assistance is technically sound, valid, defensible, and demonstrates a thorough understanding of the technologies and site conditions. Timely, complete, and accurate.
10.2	Work Assignment Closeout Report	Per regional specifications

Attachment 3

Regulations and Guidance Documents

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RA process:

1. American National Standards Practices for Respiratory Protection. American National Standards Institute Z88.2-1980, March 11, 1981.
2. ARCS Construction Contract Modification Procedures September 89, OERR Directive 9355.5-01/FS.
3. CERCLA Compliance with Other Laws Manual, Two Volumes, USEPA, Office of Emergency and Remedial Response, August 1988 (DRAFT), OSWER Directive No. 9234.1-01 and -02.
4. Community Relations in Superfund — A Handbook, USEPA, Office of Emergency and Remedial Response, June 1988, OSWER Directive No. 9230.0-3B.
5. A Compendium of Superfund Field Operations Methods, Two Volumes, USEPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.
6. Construction Quality Assurance for Hazardous Waste Land Disposal Facilities, USEPA, Office of Solid Waste and Emergency Response, October 1986, OSWER Directive No. 9472.003.
7. Contractor Requirements for the Control and Security of RCRA Confidential Business Information, March 1984.
8. Data Quality Objectives for Remedial Response Activities, USEPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.
9. Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, USEPA Region IV, Environmental Services Division, April 1, 1986 (revised periodically).
10. EPA NEIC Policies and Procedures Manual, EPA-330/9-78-001-R, May 1978, revised November 1984.
11. Federal Acquisition Regulation, Washington, DC: U.S. Government Printing Office (revised periodically).
12. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, USEPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive NO. 9355.3-01.
13. Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potential Responsible Parties, USEPA Office of Emergency and Remedial Response, EPA/540/G-90/001, April 1990.
14. Guidance on Expediting Remedial Design and Remedial Actions, EPA/540/G-90/006, August 1990.
15. Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites, USEPA Office of Emergency and Remedial Response (DRAFT), OSWER Directive No. 9283.1-2.
16. Guide for Conducting Treatability Studies Under CERCLA, USEPA, Office of Emergency and Remedial Response, Prepublication version.
17. Guide to Management of Investigation-Derived Wastes, USEPA, Office of Solid Waste and Emergency Response, Publication 9345.3-03FS, January 1992.
18. Guidelines and Specifications for Preparing Quality Assurance Project Plans, USEPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.
19. Health and Safety Requirements of Employees Employed in Field Activities, USEPA, Office of Emergency and Remedial Response, July 12, 1982, EPA Order No. 1440.2.
20. Interim Guidance on Compliance with Applicable of Relevant and Appropriate Requirements, USEPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.
21. Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, USEPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.
22. Methods for Evaluating the Attainment of Cleanup Standards: Vol. 1, Soils and Solid Media, February 1989, EPA 23/02-89-042; vol. 2, Ground water (Jul 1992).
23. National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, Federal Register 40 CFR Part 300, March 8, 1990.
24. NIOSH Manual of Analytical Methods, 2nd edition. Volumes I-VII for the 3rd edition, Volumes I and II, National Institute of Occupational Safety and Health.
25. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health/Occupational Health and Safety Administration/United States Coast Guard/Environmental Protection Agency, October 1985.
26. _____ OSWER Directive No. 9355.7-02, May 23, 1991. [Guidance, p. 3-5]
27. _____ OSWER Directive No. 9242.3-08, December 10, 1991. [Guidance, p. 2-2]
28. Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, February 19, 1992, OSWER Directive 9355.7-03.
29. Procedure for Planning and Implementing Off-Site Response Actions, Federal Register, Volume 50, Number 214, November 1985, pages 45933-45937.
30. Procedures for Completion and Deletion of NPL Sites, USEPA, Office of Emergency and Remedial Response, April 1989, OSWER Directive No. 9320.2-3A.

31. Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors, Volume 1, Preliminary Edition for Trial Use and Comment, American Society of Civil Engineers, May 1988.
32. Remedial Design and Remedial Action Handbook (Draft), USEPA, Office of Emergency and Remedial Response, August 1993, OSWER Directive No. 9355.5-22.
33. Scoping the Remedial Design (Fact Sheet), May 1993, OSWER Publ. 9355-5-21 FS.
34. Standard Operating Safety Guides, USEPA, Office of Emergency and Remedial Response, November 1984.
35. Standards for the Construction Industry, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.
36. Standards for General Industry, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.
37. Superfund Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, April 1990, _____.
38. Superfund Remedial Design and Remedial Action Guidance, USEPA, Office of Emergency and Remedial Response, June 1986, OSWER Directive No. 9355.0-4A.
39. Superfund Response Action Contracts (Fact Sheet), May 1993, OSWER Publ. 9242.2-08FS.
40. TLVs-Threshold Limit Values and Biological Exposure Indices for 1987-88, American Conference of Governmental Industrial Hygienists.
41. Treatability Studies Under CERCLA, Final. USEPA, Office of Solid Waste and Emergency Response, EPA/540/R-92/071a, October 1992.
42. USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, USEPA, Office of Emergency and Remedial Response, July 1988.
43. USEPA Contract Laboratory Program Statement of Work for Organic Analysis, USEPA, Office of Emergency and Remedial Response, February 1988.
44. User's Guide to the EPA Contract Laboratory Program, USEPA, Sample Management Office, August 1982.
45. Value Engineering (Fact Sheet), USEPA, Office of Solid Waste and Emergency Response, Publication 9355.5-03FS, May 1990.
46. Guide to Documenting Cost and Performance for Remediation Projects, Publication EPA-542-B-95-002, March 1995.
47. Presumptive Remedies: Policy and Procedures, U.S. EPA, Office of Solid Waste and Emergency Response, Directive 9355.0-47FS, EPA 540-F-93-047, PB 93-963345, September, 1993.
48. Presumptive Remedies for Soils, Sediments, and Sludges at Wood Treater Sites, U.S. EPA, Office of Solid Waste and Emergency Response, Directive 9200.5-162, EPA/540/R-95/128, PB 95-963410, November, 1995.
49. Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Groundwater at CERCLA Sites, U.S. EPA, Office of Solid Waste and Emergency Response, Directive 9283.1-12, EPA 5401R/023, June, 1996.

APPENDIX B

RESUMES OF KEY PERSONNEL

Larry M. Campbell, P.E.

Black & Veatch Special Projects Corp.
Civil Engineer

Specialization Management of multidisciplinary projects/programs for hazardous waste site investigations and remediation.

Background Mr. Campbell is experienced in obtaining, negotiating, and managing large multidisciplinary government and private-sector projects associated with hazardous waste site investigations, remedial design, and remediation. His responsibilities since 1983 have largely been associated with projects generated in response to various environmental regulations such as CERCLA, SARA, RCRA, TSCA, and others.

Earlier responsibilities included work on nuclear power plant and nuclear waste repository siting and licensing studies; geotechnical studies including subsurface investigations, foundation design, and earthwork and foundation construction; and corporate and project quality assurance functions.

Project Experience

Year	Project/Client	Location	Position
1997-1998	Alternative Remedial Contracting Strategy (ARCS) <i>EPA Region V</i>	Chicago, Illinois	Program Manager (Contract Manager, previously)
Responsibilities:	Manages and supervised all ARCS V projects including remedial investigations, feasibility studies, risk assessments, pre-design activities, remedial design, construction management, enforcement support, technical support, public participation activities, and site screening inspection projects.		
1995-2000	Remedial Design/Remedial Action <i>EPA</i>	New Brighton, Minnesota	Project Manager
Responsibilities:	Performed remedial design activities for Operable Unit 3 of wood preserving facility site, including additional pre-design investigation of contaminated soil and groundwater and subsequent design of solidification/stabilization processes for metals-contaminated soils and extraction and treatment of organics-contaminated groundwater. Successfully remediated approximately 15,000 cu. yd. of soil using onsite solidification/stabilization with offsite disposal. Successfully constructed and operated groundwater extraction and treatment system using a bioreactor to remove organic contamination (primarily pentachlorophenol [PCP]). From initial startup in March 1999 through February 2000, have discharged more than 20 million gallons of groundwater to the local POTW with no exceedences of the discharge permit limits.		
1995-1997	Soil Remediation <i>Illinois State Toll Highway Authority</i>	Northeastern Illinois	Project Manager
Responsibilities:	Remediated petroleum-contaminated soil at six toll plazas, prepared appropriate documentation to obtain "4Y" letter of clean closure from Illinois Environmental Protection Agency (IEPA), and prepared documentation to claim reimbursement from the Illinois Leaking Underground Storage Tank (UST) Fund.		

Larry M. Campbell, P.E.

Year	Project/Client	Location	Position
1994-1996	Various Environmental Projects <i>City of Chicago, Depts. of Environment, Planning, and Bridges</i>	Chicago, Illinois	Program Manager
Responsibilities:	Conducted UST investigations, removals, and remediations; investigated contamination at three Brownfields sites; designed and implemented remediation of two of the Brownfields sites; conducted two large, multi-site Phase I Environmental Site Assessments; enrolled contaminated sites in the Illinois Pre-Notice Voluntary Cleanup Program and implemented IEPA requirements.		
1994-1995	Permit Application Review <i>City of Chicago, Depts. of Environment and Law</i>	Chicago, Illinois	Project Manager
Responsibilities:	Reviewed permit application for first medical waste treatment (autoclave) and transfer facility to be built and operated in Chicago.		
1992-1993	Various Environmental Projects <i>U.S. Air Force</i>	Elmendorf AFB, Alaska	Program Manager
Responsibilities:	Obtained, negotiated, and implemented multimillion dollar, multiyear contract to provide environmental engineering services. Developed and implemented management and contracting documents and procedures to provide environmental services through fixed-price indefinite delivery, indefinite quantity contract. Subsequent projects included investigations at multiple petroleum spill, underground storage tank, and landfill sites; landfill closure and resource reclamation plan; oil spill plan; environmental assessment of gravel pit expansion; stormwater pollution prevention plan; and lead-based paint survey plans.		
1991-1993	Various Environmental Projects <i>U.S. Air Force and U.S. Army</i>	Alaska	Regional Program Manager
Responsibilities:	Provided environmental services under a work-for-others contract with Tennessee Valley Authority. Was principal-in-charge of 13 projects at all major and remote U.S. Air Force bases in Alaska and at Fort Richardson. Services included environmental assessment of military training routes, comprehensive (solid) waste management plan, oil spill plans (7 sites), PCB transformer sampling/testing, preliminary assessment and site inspection, hazardous and petroleum spill investigations, hazardous waste classification and removal, oil-water separator cleanout and inspection, hydrogeologic studies, and project plans for multisite petroleum spill, underground storage tank, and landfill investigations.		
1983-1991	Various Superfund Projects <i>EPA Potentially Responsible Parties</i>	Midwest	Principal-in-Charge/ Program Manager/Site Manager
Responsibilities:	<p>Managed, conducted, or reviewed various remedial investigation (RI), risk assessment (RA), and feasibility study (FS) projects on behalf of EPA or potentially responsible parties (PRPs).</p> <p>Principal-in-charge of three EPA and state Superfund RI/RA/FS projects in Wisconsin, Michigan, and Indiana for PRPs (1989-91). Prepared RI/FS work plan for Superfund site in Missouri for Clean Sites (1987), and as professional engineer reviewer of Superfund site in Minnesota for PRPs (1988).</p> <p>Program manager for RI/FSs as subcontractor to CH₂M Hill on EPA Remedial Planning/Field Investigation Team (REM/FIT) contract (1983-85). Directly involved in planning and conducting RI field studies at five sites in Illinois, Michigan, Ohio, and California, and directed preparation of and reviewed RI reports for two sites. Project manager for an Ohio site, prepared RI report, and directed preparation of FS report.</p>		

Larry M. Campbell, P.E.

Year	Project/Client	Location	Position
	Site manager for two Superfund sites in Ohio and Wisconsin as subcontractor to Camp Dresser & McKee on EPA REM II contract (1985-87). Planned and conducted RI field studies at one site and prepared work plan for PRP-conducted RI/FS at other site.		
1988-1989	UST Closures <i>AT&T</i>	Winston-Salem, North Carolina; Skokie, Illinois	Project Manager
Responsibilities:	Served as certifying professional engineer for removal and closure of RCRA hazardous waste system at operating manufacturing facility in North Carolina. Also, served as principal-in-charge of investigation and design of groundwater extraction and treatment system. Served as project manager to investigate leakage from seven fuel and chemical USTs, prepare technical specifications for their removal, and inspect and document such removal and disposal from operating facility in Illinois.		
1987-1988	PCB Remediation <i>AT&T</i>	Norcross, Georgia	Project Manager
Responsibilities:	Prepared technical specifications and inspected, removed, and disposed of PCB-contaminated soil from operating manufacturing plant. Project included installation of field laboratory using gas chromatograph with electron capture detector for expedited, onsite testing of PCB concentrations.		
1987	Foundry Remediation <i>Confidential Client</i>	Davenport, Iowa	Project Manager
Responsibilities:	Managed assessment and disposition of hazardous baghouse dust from electric furnace operation.		
1982-1985	Remedial Design <i>Waste Management Inc.</i>	Wichita, Kansas	Administrative Project Manager
Responsibilities:	Directed fast-track design for remedial construction program at existing hazardous waste disposal site. Responsible for cost control, purchasing/leasing, contracting/subcontracting, and reviewing of technical specifications, design drawings, and health and safety plans.		
1981-1983	Geotechnical Studies <i>Consumers Power Company</i>	Midland, Michigan	Project Manager
Responsibilities:	Managed subsurface exploration and testing program at nuclear plant to confirm applicability of soil properties used in design and to establish design parameters for remedial foundation construction. Supervised 30-person technical staff to obtain highest quality soil samples, perform comprehensive suite of index and engineering property laboratory tests, and document data in series of reports submitted to Nuclear Regulatory Commission. Instituted first boring and sampling program conducted at plant under nuclear quality assurance program.		
1980-1981	Construction Audit <i>Houston Lighting & Power Company</i>	Bay City, Texas	Task Force Manager
Responsibilities:	Managed 17-person, 3-company technical task force that evaluated construction conditions, engineering adequacy, and quality control aspects of structural backfill placed at South Texas Project Nuclear Station. Audit based on detailed review and evaluation of backfill placement and testing records, and correlation with in situ testing results.		

Larry M. Campbell, P.E.

Year	Project/Client	Location	Position
1975-1979	Nuclear Siting Studies <i>Public Service of New Mexico, Pacific Gas and Electric Company, U.S. Nuclear Regulatory Commission (NRC) Office of Nuclear Waste Isolation</i>	California & New Mexico	Assistant Project Manager, Publications Director, Deputy Project Manager
Responsibilities:	<p>Served in various management capacities on three nuclear power plant and nuclear waste repository siting and licensing studies in California and New Mexico.</p> <p>Assistant project manager for state-wide nuclear power plant siting study for Public Service of New Mexico (1977-79). Responsible for planning, coordinating, controlling, and quality control of geologic, seismologic, geotechnical, hydrologic, and environmental studies. Managed preparation of one siting report.</p> <p>Publications director of nuclear licensing study reports for Pacific Gas and Electric Company's Stanislaus Nuclear Project in California (1975-77). Coordinated, integrated, and unified activities during preparation and technical review of site suitability-site safety report, environmental report, and notice of intention.</p> <p>Deputy project manager for nuclear waste repository geologic siting study in Utah's Paradox Basin for Office of Nuclear Waste Isolation (1979). Participated in initial planning and scheduling activities and prepared project quality assurance manual.</p>		
1976	Laboratory Testing <i>Alaska Pipeline Service Company</i>	Oakland, California	Project Engineer
Responsibilities:	Managed fast-track laboratory research program to determine properties of frozen soils for trans-Alaskan oil pipeline.		
1974-1975	Pipeline Environmental Assessment <i>Western LNG Associates</i>	California	Project Manager
Responsibilities:	Managed environmental assessment studies and preparation of environmental report for 26-mile-long gas pipeline from proposed liquified natural gas gasification facility. Testified before Federal Power Commission regarding environmental impacts of pipeline.		
1972-1973	Nuclear Plant EIS <i>Mississippi Power and Light</i>	Grand Gulf, Mississippi	Field Manager
Responsibilities:	Designed, conducted, and managed interdisciplinary field staff of 18 scientists who conducted ecologic, hydrologic, meteorologic, and water quality measurement programs for Grand Gulf Nuclear Station in Mississippi. Also participated in preparation of hydrology, storm surge, and related sections of environmental and safety analysis reports for this and another proposed nuclear power station in Louisiana.		
1967-1972	Geotechnical Studies <i>Various Clients</i>	Eastern United States and Puerto Rico	Project Engineer
Responsibilities:	Planned, conducted, and managed geotechnical studies involving subsurface investigations, earthwork and foundation construction, and field and building instrumentation programs in many eastern states, Florida, and Puerto Rico. Projects included shipping terminals, sewage treatment plants, industrial plants and facilities, and residential land development complexes. Investigated foundation failures, and designed and supervised remedial measures in New York, New Jersey, and Panama. Inspected site preparation activities and construction of highways, bridges, and pile, pier, and shallow foundations for buildings and other structures. Also planned, conducted, and analyzed field performance testing such as plate and pile load tests and surcharge-settlement test		

Larry M. Campbell, P.E.

Year	Project/Client	Location	Position
	fills.		
1975-1977	Quality Assurance <i>Woodward-Clyde Consultants</i>	San Francisco, California	Regional Quality Assurance Officer
Responsibilities:	Participated in development of corporate-wide quality assurance program and manual for major engineering/environmental consulting firm. Responsible for development, implementation, and surveillance of program within firm's western region. Supervised and participated in preparation of regional procedures manuals and other special project quality assurance programs and manuals. Also participated in both internal and external audits of company activities on nuclear power and hazardous waste projects.		

QUALIFICATIONS

Education:	M.S., Civil Engineering (Geotechnical), University of Illinois, 1966 B.S., Civil Engineering, University of Illinois, 1964
Professional Registration:	Illinois, 1985, Alaska, Minnesota, Missouri, North Carolina
Specialization Certification:	BVSPC Project Management 40-Hour Hazardous Waste Operations Health and Safety 8-Hour OSHA Annual Hazardous Waste Operations Refresher 8-Hour OSHA Hazardous Waste Operations Site Supervisor 8-Hour OSHA Confined Space Entry 10-Hour OSHA Construction Safety Safety and Health Program Administration First Aid Bloodborne Pathogens (BBP)/CPR
Professional Associations:	American Society of Civil Engineers Society of American Military Engineers Tau Beta Pi Chi Epsilon
Year Joined Black & Veatch:	1994
Total Years of Experience:	33
Citizenship:	United States of America
Language Capabilities:	English

Chad Gailey

Black & Veatch Corporation
Geologist

Background Mr. Gaily is a geologist experienced in remedial investigations, site investigations, oversight of source removal and site redevelopment, and groundwater data evaluation.

Project Experience

	Project/Client	Location	Position
	Northwest Side Relief Sewer <i>Milwaukee Metropolitan Sewerage District</i>	Milwaukee County, WI	Geologist
Responsibilities:	Served as geologist for the Northwest Side Relief Sewer project in the metropolitan Milwaukee area. Responsibilities include direction of site work during geotechnical drilling and supervision of drilling subcontractor. The project involves the design of 7 miles of 144-inch relief sewer, approximately 90 to 150 feet below ground. The sewer will be constructed using hard rock tunneling excavation and support methods.		
	Manufactured Gas Plant Investigation and Remediation <i>Nicor Gas</i>	Various facilities near Chicago, Illinois	Geologist
Responsibilities:	Assisted with investigation and remedial design activities on a former manufactured gas plant site in northern Illinois. This site is enrolled in the Illinois Environmental Protection Agency SRP. Activities to-date include preparation of all investigation planning documents, coordination with IEPA management staff and enrollment of the site in the IEPA SRP, investigation of site soils and groundwater, preparation of an IEPA-compliant Remedial Objectives Report, assessment of the site impacts using the TACO-compliant tiered evaluation criteria, and a Tier 3 risk assessment, preparation of numerous ancillary documents and meeting materials, and evaluation of alternatives for remedial actions.		
	Remedial Design/Action Oversight <i>U.S. Environmental Protection Agency</i>		Geologist
Responsibilities:	Provided oversight of several aspects of this multi-faceted investigation, remedial design/remedial action (RD/RA) at the American Chemical Services Site. Work completed to-date includes field oversight of potentially responsible party (PRP) activities to ensure construction takes place in accordance with the U.S. Environmental Protection Agency (EPA) accepted plan and specifications; work efforts to schedule, collect, track, and oversee the analysis of environmental and waste samples; preparation of data evaluation reports; and review of PRP RD submittal.		
	Remedial Investigation <i>U.S. Environmental Protection Agency</i>		Geologist
Responsibilities:	Responsibilities include day-to-day technical coordination of various work assignment activities for the Rockwell International Site. Assisted in writing and executing a field sampling plan for an RI, which includes all aspects of compiling and evaluating data.		

QUALIFICATIONS

Education: B.S., Geology, Northeastern Illinois University, 1998

Year Joined Black & Veatch: 1998

Richard M.H. McAvoy

Black & Veatch
Chemical Engineer

Specialization Process design; project engineering; construction management; remedial investigations (RIs); feasibility studies (FSSs); environmental audits and permitting; chemical engineering; theoretical modeling; and cost engineering.

Background Dr. McAvoy has more than 25 years of experience in hazardous waste, pollution control, remedial investigations, feasibility studies, process/project/cost engineering, construction management, and manufacturing management. Hazardous waste experience includes management of an MGP Nicor Gas Site, 10 multiple expanded site inspections (ESIs), 29 multiple site screening inspections (SSIs) and 7 Superfund sites under the Alternative Remedial Contracting Strategy (ARCS) V and Technical Enforcement Support (TES) 9 programs for EPA Region V.

Project Experience

Year	Project/Client	Location	Position
1998-Present	Nicor Gas MGP Site RI/RD/RA	Kankakee, Illinois	Site Manager
Responsibilities:	Directed the groundwater RI and evaluation, remedial design, and remedial action of an active church facility whose soils and groundwater were contaminated with coal tar and coal tar by-products.		
1995-Present	MacGillis & Gibbs NPL Site Remedial Design USEPA	Minnesota	Project Engineer
Responsibilities:	Performed treatability testing, and prepared design plans and specifications for soil stabilization and groundwater pump and treat systems.		
1994-Present	Rutgers Nease NPL Site RI/FS Oversight USEPA	Salem, Ohio	Project Manager
Responsibilities:	Performed reviews of RI/FS documents to verify RI/FS complied with USEPA guidance. Managed extensive field oversight of RI including the investigation of surface water and sediments of 26 mile long river contaminated with mirex and photomirex.		
1995-1998	Multiple ESI's USEPA	Illinois	Project Manager
Responsibilities:	Supervised background search, site inspection, monitoring well installation and sampling visits, and completion of ESI reports for 10 Illinois Comprehensive Environmental Response, Compensation, and Liability Information System listed sites.		

1994-1997	Lenz Oil NPL Site RI/FS Oversight <i>USEPA</i>	Lemont, Illinois	Project Manager
Responsibilities:	Directed field oversight of RI and split sample collection for nonaqueous phase liquid (NAPL) contaminated oil storage and solvent storage facility. Completed extensive review of very large FS to verify remedial alternatives complied with EPA cleanup objectives.		
1994-1997	Dover Chemical NPL Site RI/FS Oversight <i>USEPA</i>	Dover, Ohio	Project Manager
Responsibilities:	Completed complex human health and ecological risk assessment ahead of EPA's fast track schedule. Reviewed extensive potentially responsible party FS to verify it complied with EPA cleanup objectives.		
1994	Bay City Landfill NPL Site EE/CA <i>USEPA</i>	Bay City, Michigan	Project Manager
Responsibilities:	Supervised development of removal action alternatives, ahead of EPA's fast track schedule, and completion of engineering evaluation and cost analysis (EE/CA) for landfill contaminated with 11,000 gallons of PCBs.		
1993-1997	Multiple SSIs <i>USEPA</i>	Illinois	Project Manager
Responsibilities:	Directed background search, site inspection, sampling visits, and completion of SSI reports for 29 Illinois Comprehensive Environmental Response, Compensation, and Liability Information System listed sites.		
1991-1997	OCI Chemical NPL Site RI/FS, RD/RA Oversight <i>USEPA</i>	Granville, Michigan	Project Manager
Responsibilities:	Directed groundwater and soil RI which consisted of installing shallow and bedrock groundwater monitoring wells as well as drilling surface and subsurface borings. Completed RI report and FS which considered cleanup alternatives for groundwater and soil that included pump and treat system for shallow groundwater and soil washing for contaminated soil. Potentially responsible party remedial design/remedial action documents were reviewed to verify compliance with record of decision. Field oversight was performed on first phase of construction of pump and treat system.		
1990-1997	Summit National NPL Site RD/RA Oversight <i>USEPA</i>	Deerfield Township, Ohio	Project Manager
Responsibilities:	Performed reviews of 14 potentially responsible party RD/RA documents to verify RD/RA components satisfied consent decree. Field oversight was performed on RA activities, including predesign investigations, groundwater treatment system construction, groundwater extraction system construction, soil removal, onsite thermal treatment, treated soil backfilling and grading, and installation of soil cap.		
1987-1990	Environmental Engineering <i>ATD, Inc.</i>	Chicago, Illinois	Director Process Equipment Design
Responsibilities:	Designed, developed, and constructed fluidized bed process for treating fluidizable hazardous wastes. Performed thermal desorption pilot study on PCB contaminated harbor sludges. Design		

and installed several off-gas incinerators for steel treating furnaces. Designed and constructed several sludge dryer off-gas treating units for paper industry clients.

1979-1987	Manufacturing Operations <i>Conrac Corporation</i>	Franklin Park, Illinois	Operations Manager
Responsibilities:	Directed all manufacturing, manufacturing engineering, maintenance, production control, inventory management, and environmental engineering operations. Achieved environmental permit compliance for an extensive plating process, reduced inventory by 12%, increased productivity by 25%, and reduced product delivery time by 50%.		
1978-1979	Technical Proposal Support <i>Richards of Rockford</i>	Rockford, Illinois	Technical Director
Responsibilities:	Provided technical support for proposals. Supervised design and construction of wastewater treatment equipment for OEM manufacture. Researched, developed, designed, and put into operation an underwater mixing and aeration device for use in large industrial and municipal waste treatment ponds and lagoons. Developed computer model to simulate oxidation reactions and generate heat and material balances for several waste treatment plants.		
1976-1978	Manufacturing <i>AMI, Inc.</i>	Mount Prospect, Illinois	Director of Manufacturing/ Plant Manager
Responsibilities:	Responsible for all chemical and machine manufacturing, maintenance, and engineering support. Reduced \$30 million inventory to \$12 million by implementing MRP-type inventory control system. Designed, constructed, and put into operation six hydrocarbon gas incinerators that employed tertiary heat recovery. Designed, constructed, and started up two hydrocarbon solvent recovery plants in Weybridge, England, and Herstal, Belgium.		
1973-1976	Manufacturing Engineering <i>AMI, Inc.</i>	Mount Prospect, Illinois	Manager Manufacturing Engineering
Responsibilities:	Provided engineering support for all chemical and machine manufacturing facilities. Developed cost reduction program that resulted in savings of approximated \$1 million per year. Developed computer process model that was used to conduct economic studies and process designs for several hydrocarbon gas incinerators and hydrocarbon/gas solvent recovery plants.		
1972-1973	Environmental Affairs <i>AMI, Inc.</i>	Mount Prospect, Illinois	Staff Environmental Engineering
Responsibilities:	Performed environmental process audits of all manufacturing facilities and obtained all necessary air, water, and solid waste permits. Performed environmental investigations and process studies which enabled environmental compliance at \$2.5 million less than estimated made by private environmental engineering consulting firm.		

1971-1972	Chemical Manufacturing Process Control Improvements <i>AMI, Inc.</i>	Mount Prospect, Illinois	Manager Manufacturing Engineering Chemicals
Responsibilities:	Designed and supervised installation of several computerized process control systems that automated multi-machine chemical coating line and reduced operating expenses by \$875,000 per year. Successfully developed and introduced several new products into manufacturing process that generated additional \$2 million per year in sales.		
1969-1971	Process Development <i>AMI, Inc.</i>	Mount Prospect, Illinois	Senior Group Leader
Responsibilities:	Developed process improvements for multi-machine chemical coating and mixing line which improved product performance and save \$750,000 per year in operating expenses.		
1966-1969	Process Design <i>Amoco Chemical Corporation</i>	Hammond, Indiana	Senior Project Chemical Engineer
Responsibilities:	Participated in process design and subsequent startup of several improvements for 250 million pound per year styrene plant in Texas City, Texas. Performed process designs for two 100 million pound per year paraxylene plants in Ponce, Puerto Rico, and Texas City, Texas. Conducted process designs and economic studies for several liquid fluidized polypropylene plants. Designed multi-column propane/ propylene distillation tower.		
1964-1996	Fluidized Iron Reduction <i>Esso Research Laboratories</i>	Baton Rouge, Louisiana	Chemical Engineer
Responsibilities:	Participated in process design and development of gas fluidized iron ore reduction process. Conducted radioactive gas tracer studies to develop multi-phase gas fluidized process model using analog computers. Participated in development, improvement, and maintenance of complex computerized multi-stage gas fluidized process model.		

QUALIFICATIONS

Education: Ph. D., Chemical Engineering, Illinois Institute of Technology, 1965
M.S., Chemical Engineering, Illinois Institute of Technology, 1961
B.S., Chemical Engineering, Illinois Institute of Technology, 1960

Professional Registration : Illinois, 1992

Specialization Certification: Competent Person for Construction Safety and Health
40-Hour Hazardous Waste Health and Safety Training
8-Hour Hazardous Waste Health and Safety Training Refresher
Hazardous Waste Site Supervisor Training
Confined Space Training
8-Hour Excavation Training
DOT Hazmat Shipping

Professional Associations: American Institute of Chemical Engineers
American Chemical Society
Sigma Xi Research Society
Tau Beta Pi
Phi Lambda Upsilon

Year Joined Black & Veatch: 1990

Total Years of Experience: 36

Citizenship: United States of America

Language Capabilities: English

PUBLICATIONS

Title	Publication	Date
Coalescence of Large Drops	A.I.Ch.E. – I.Chem. E. Symposium Series No. 1 (London: Institution of Chemical Engineers)	1965
Approach of Two Identified Rigid Spheres in a Liquid Field	Journal of Colloid Science 20	1965

Jay Basso

Black & Veatch Corporation

Project Engineer

Specialization Remediation

Background Mr. Basso has more than 3 years of experience in environmental engineering including oversight of landfill remediation and drum removal, completion of focused Phase II investigations and Phase III remediation and compliance activities, and field sampling.

Project Experience

	Project/Client	Location	Position
Responsibilities:	Mercury Project <i>Nicor Gas</i>	Various	Site Manager/ Project Engineer
	Assisted Nicor Gas in conducting indoor air sampling for elemental mercury, including observation, monitoring, and coaching of inspectors, document review, equipment maintenance, community relations, and supervision and scheduling of inspectors.		
Responsibilities:	Belvidere MGP Site <i>Nicor Gas</i>	Belvidere, Illinois	Project Engineer
	Responsible for designing and implementing multi-phase extraction system for removal of coal tar and soil vapors in buried gas holders.		
Responsibilities:	Environmental Engineer <i>Conestoga-Rovers & Associates</i>	Various	Project Engineer
	Conducted oversight of PRP remedial activities at CERLCA sites. Coordinated and completed focused Phase II and Phase III Site Remediation and compliance activities for various corporate clients. Conducted extensive field sampling. Operated and maintained groundwater treatment system.		

QUALIFICATIONS

Education: B.S., Civil and Environmental Engineering, Marquette University, 1998

Professional Associations: American Society of Civil Engineers

Year Joined Black & Veatch: 2000

Total Years of Experience: 3.5